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MEASURING RESILIENCY IN ADOLESCENCE:
THE PRESS SCALE OF RESILIENCY

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Interdisciplinary Studies:
Health and Behavioral Science

by
Robert Gerald LaChausse

December 1998

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THE PRESS SCALE OF RESILIENCY

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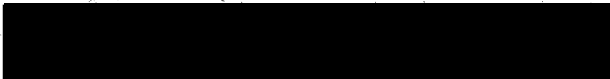
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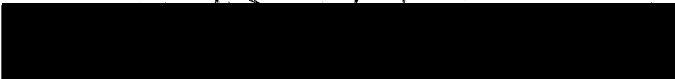
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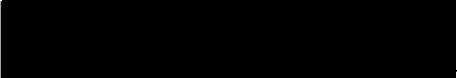
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ABSTRACT

Since the early work of Emmy Werner in the 1960's, the term *resiliency* has become a buzzword for those involved in adolescent prevention programs. To date, much of the current literature has focused on environmental or protective factors rather than developmental factors associated with resilient youth. When applied to the planning or evaluation of at-risk youth programs, the definition of resiliency has not been clearly defined. Therefore, the purposes of this current study are: 1) to explore the similarities and differences between protective factors in the environment and developmental factors associated with resiliency; 2) to propose a more practical and reliable instrument to measure changes in resiliency in youth. The current findings suggest that a measure that can assess the extent to which protective factors lead to a change in developmental factors more closely related to resiliency is a better indicator of outcomes related to at-risk youth projects than merely examining environmental factors in or around the adolescent's life. As a result, a model of such an instrument is introduced including issues

related to survey development, findings, and implications
for practice and further research.

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CHAPTER ONE

Background on Resiliency

Adolescence constitutes a defined developmental period and problems during this period often contribute to cumulative risk. Therefore, it is necessary to monitor the effects that prevention programs have on the health outcomes of adolescents. Researchers in the area of adolescent health have long searched for the ideas that could explain why some adolescents overcome risk and become productive and contributing members of their communities whereas others do not. This phenomenon, known as *resiliency*, has been defined as "the capacity in those who are exposed to identifiable risk factors to overcome risks and avoid negative outcomes such as delinquency and behavioral problems, psychological maladjustment, academic difficulties, and physical complications" (Hauser, Vieyra, Jaycobson, and Wetreib, 1985). Resilient children have been called "invulnerables", "superkids", and "resilient" (Bolig and Weddle, 1998). To date, policies and programs aimed at preventing or reducing risks among adolescents are fundamentally uninformed by studies of the individual basis of resiliency among adolescents.

Purpose of Study

The purpose of this thesis is to propose a more reliable, practical, and applicable instrument for assessing changes in resiliency in adolescent prevention projects. In order to fully understand the concept of resiliency, it is important to examine the similarities and differences between environmental protective factors and individual developmental factors associated with resiliency. Specifically, it is necessary to first understand the background and history regarding the resiliency approach. Second, it is imperative that there is a clear understanding regarding the similarities and differences between the environmental protective factors and individual developmental factors related to resiliency. Also, it is important to understand the methods and procedures for the development of such the proposed scale including those factors most closely related to resiliency and how to best measure them. Finally, it is important to understand the implication such an instrument will have on measuring health related outcomes of children and adolescents.

CHAPTER TWO

Literature Review

The phenomenon of resiliency is not uncommon in at-risk children. Researchers have provided evidence documenting some people's ability to overcome risk in their lives. For example, in a longitudinal study, Werner (1992) followed a large sample of youths in Hawaii starting with the children's births in 1955. The participants in the study experienced four or more of the following risk factors: poverty, family discord, divorce, parental alcoholism, and parental mental illness. Even with multiple risk factors, many of these children grew into competent young adults who "loved well, worked well, played well, and expected well" (Werner, 1992).

Rutter (1979) studied a group of children in London who had experienced parental divorce, low socioeconomic status, and maternal psychiatric disorders. It was found that a single stressor did not have a significant impact, but combinations of two or more stressors diminished the likelihood of positive outcomes, and additional stressors increased the impact of all other existing stressors (Rak, 1996).

Research has repeatedly confirmed a link between stressors in the environment and the ability of children to

overcome adversity in their lives. This research has succeeded in identifying a wide range of childhood, family, community, and other environmental factors that are associated with decreasing the level of risk in youth who would otherwise engage in behaviors related to school delinquency, anti-social behavior, and mental health problems (Rak and Patterson, 1996). As a result, researchers and practitioners have begun to use resiliency-related programming with at-risk youth.

Bernard (1991) has identified four individual and three environmental characteristics of resilient youth including: social competence, problem solving skills, autonomy, a sense of purpose, caring relationships, high expectations, opportunities for participation (Bernard, 1991). Social competence includes those skills related to building relationships. These skills include communication skills, a sense of humor, and responsiveness to others. Problem solving skills encompass the ability to plan, which enables a sense of control and hope for the future (Bernard, 1991). Autonomy means developing one's sense of self and identity away from others, including the family. Also, this includes the ability to act and exert one's will. Autonomy allows the resilient youth to have a greater degree of control over their lives and in specific situations. A sense of purpose

refers to such characteristics as goal directedness, achievement motivation, educational aspirations, and success orientation. Having what Bernard terms "caring relationships" is also a protective factor. The presence of a caring, supportive relationship with someone, somewhere in the life of a child has been shown to be a powerful protective factor emerging from resiliency research (Bernard, 1991). This person can often take the form of a teacher, neighbor, or other supportive adult outside the family. Bernard (1991) concludes that children who participated in various hobbies, clubs and after school programs tend to be able to handle stress and overcome adversity.

Most of the research on resiliency and protective factors has taken place in other fields than health and has centered on identifying resilience retrospectively, that is, through an historical assessment of adults (Bernard, 1991). For example, after World War II, social scientists studied what made certain individuals more resilient in the face of the London Blitz or internment in concentration or prisoner-of-war camps (Dugan & Coles, 1989).

Festinger (1983) looked at resiliency among adults who grew up in foster care placements. His studies examined adults reflecting back on the protective factors in their

earlier lives rather than how resiliency changes across the life span.

At the same time, much of the work regarding resiliency has focused solely on specific protective factors in the environment. These protective factors have been also called "buffering factors" (Fergusson, 1996) "resilient factors" (Bernard, 1991), and "individual protective factors" (Hawkins, 1992).

However there are some differences between protective factors in the environment and individual developmental factors in the adolescent. Garmezy et. al (1984) has postulated three (3) models of resiliency: *compensatory*, *challenge*, and *conditional*. The *compensatory model* looks at the combinations of risk and protective factors in an adolescent's environment to predict outcomes for the child. For example, consider the case of a 9 year- old girl who had progressed despite repeated illness, poverty, and an alcoholic father, with several protective factors present, including involvement with extended family and a supportive school environment (Rak and Patterson, 1996). As the risk factors increased, the ratio of risk factors overwhelmed the protective factors thus leading to poor outcomes for the girl. The *challenge model* approach posits that risk factors may be potential enhancers of protective factors provided

that there are a limited amount of risk factors. An example would be a 10 year-old boy who was placed in a different school. Given a history of protective factors, he was able, after a very stressful period, to adjust to the new environment and thrive (Rak and Patterson, 1996). The most least understood model, the *conditional model*, postulates that personal attributes work to modulate (dampen or amplify) the impact of risk factors. Rak and Patterson (1996) use the example of a boy who "prospered in part because he had a temperament that made him attractive to others, an optimism about his future possibilities, and tendency to seek out novel experiences" (Rak and Patterson, 1996).

To date, only a few instruments have been developed to measure changes in resiliency. Few have focused on this idea of the conditional model often operationally defining resiliency in a protective factors vs. risk factors model. Historically, the Individual Protective Factors Index (IPFI) (Springer and Phillips, 1995) has been used in program evaluation of risk and protective factors. The IPFI is a 6 page self report questionnaire using a Likert scale format to be completed by adolescents. The IPFI has a validation sample of 2,416 youths from 15 sites nationwide. This instrument measures a wide variety of factors proposed to be

mediating variables in the environment that promote childhood resiliency. The domains and dimensions of the IPFI are: social bonding, personal competence, and social competence.

In a discussion of childhood resiliency, Rutter (1985) drew a distinction between risk and protective factors. He suggested that protective factors were those factors which reduce risk within a high risk group even though these factors may not generally mediate risk throughout the population (Rutter, 1985). Most of the findings associated with specific protective factors and interventions have been modest. As a result, protective factors in isolation explain relatively little about the variation of outcomes in the ability of children to be resilient (Fergusson and Lynskey, 1996). This type of environmental protective factors approach raises a serious methodological dilemma. Research regarding risk factors or protective factors in the environment has demonstrated that when high risk is defined by a cut-off point on a continuous scale measure, there will inevitably be heterogeneity in the scores of those who are classified "high risk" (Fergusson, 1996). This heterogeneity will reflect the fact that not all children within each risk group will have been exposed to exactly the same types of risk factors. Such a methodological challenge also provides

a strong caveat when exploring protective factors in the environment. As the thinking goes, any scale or measure that defines a specific cut off point for environmental protection (i.e., the presence of youth services, churches, after-school activities, etc.) will also lead to heterogeneity. Therefore, the presence of heterogeneity opens the way for possible statistical artifacts since one reason for some children in high risk groups appearing to be more resilient than others might be that these children have had more exposure to protective factors or risk factors than others. Gottfredson (1986) provides an excellent programmatic example of this thinking when he examined a school-based delinquency prevention program. This program combined an organizational change approach with direct intervention for high-risk youths to reduce delinquent behavior. Results indicated that the organizational change approach, as implemented, did not reduce delinquent behavior. The program was not successful in reducing delinquent behavior for high-risk students but did produce small reductions in delinquency for the general population (Gottfredson, 1986). For example, some students grew more attached to school and perceived an increase in the fairness of school rules. As a result, the protective factor of a

supportive school environment alone did not affect outcomes related to overcoming risk in the targeted population.

Similarly, Roehlkepartain (1994) examined the effect of a systems level intervention on the cognitive characteristics of 17 resilient and 19 non-resilient students identified from a population of 170 urban high school students. The results showed that students believe their schooling environment supports their cognitive abilities. However, their schooling environment was not shown to impact other abilities including social abilities, happiness, self-efficacy, individuality or pro-social behaviors (helping others).

More specific research points out the undetermined connection between protective factors in the adolescent's environment and its effect on their resiliency. The Search Institute examined 8,266 youths that lived with a single parent. The study focused on the dynamics of healthy single-parent families that help youth beat the odds of becoming delinquent. Results indicated that it appears that categorical statements about two-parent families being good and single-parent families being bad was overstated and misconstrued. According to Benson and Roehlkepartain (1993) two-parent families have an edge, but being in one is no guarantee that a young person will have the nurturing,

control, and guidance needed to grow up healthy (Benson and Roehlkepartain, 1993). In this case, single-parent families can be supportive and healthy families in which young people can thrive (Benson and Roehlkepartain, 1993). Therefore, the quality and impact of the relationship on the child life might account for the increase in the ability to overcome risk in their lives rather than the mere presence of two parents in the home environment.

What is still unclear is the role that personality and developmental factors such as self-esteem, self-efficacy, and perceived social support play in mediating protective factors and increasing the ability of adolescents to overcome adversity in their lives.

Protective factors are those environmental factors which support the characteristics of resiliency. Resiliency factors are, on the other hand, those inherent developmental factors related to resiliency that allow a person to overcome adversity despite risk. Practitioners like Bernard and others contend that the history of any youth development model has focused on the individual characteristics of resilient children rather than justifying the need for civic responsibility. While the examination of the quality and the quantity of the services delivered in any youth project crucial, it is those innate developmental factors within the

youth that will increase the child's chance of overcoming risk in their lives. Turner et. al. (1993) found that adolescents who experienced both positive and negative life events within a short time did not experience the protective effect of those positive events in their lives. Instead, these adolescents felt that their environment was unpredictable and out of their control and that their ability to overcome risk was compromised by the instability and uncertainty in their surroundings (Turner et. al., 1993). It is important to not only look at the environmental protective factors but also the developmental characteristics of adolescents which provide us with the end product of a self-righting, resilient youth.

Resiliency Factors

Social Support. A number of studies have suggested that children who have a strong sense of social support from parents, peers, and other adults tend to be more resilient in the face of poverty (Werner, 1992), marital discourse, and divorce (Emery and O'Leary, 1982). Adolescence is often characterized by rapid developmental change and stress. The occurrence of life changing events (e.g., divorce) adds more stress to this already tumultuous time (Perrin, 1997). Evidence indicates that a positive response to such events is facilitated by a socially supportive environment (Perrin,

1997). Social support has been found to be beneficial not only to physical health but to psychological well-being as well (Windle, 1992). For the adolescent, a lack of family support has been associated with higher levels of problem behaviors, problematic peer relationships, and lower life satisfaction (Vondra & Garbarino, 1988). Conversely, positive support from peers has been linked to increased self-esteem. For example, Jenkins and Smith (1990) examined protective factors for childhood behavioral problems in a sample of 9- 12 year olds. Their results suggest that a series of factors including a good relationship with an adult outside their family and positive recognition from peers may act as protective factors that reduce risks amongst children living in dysfunctional homes (Jenkins and Smith, 1990). More important than the presence of nurturing and supportive adults is the nature of the adult/child relationships.

It is thought that the presence of warm, nurturing or supportive relationships with at least one parent may act to protect or mitigate the effects of poverty and family discourse (Bradley, 1994). For instance, Seifer et. al. (1992) studied high and low risk children from birth to age 13 and found that a series of mother-child interactions including maternal teaching style, expressed emotion, and

perceived support from the mother acted as mediating factors (Seifer et al., 1992). Other perceived sources of social support seem also to increase resiliency in children. For instance, Werner (1992) reported that resilient children in the Kauai longitudinal study reported good peer relationships throughout adolescence (Fergusson and Lynskey, 1996).

Self-Esteem. Another characteristic of children who overcome adversity is a high sense of self-worth. The capacity to understand self and self-boundaries in relation to long-term family stressors like divorce and mental illness can affect resiliency in children (Rak and Patterson, 1996). Werner (1992) described the impact that self-esteem has on resilient children by suggesting that children who are helpful in that they carry out socially desirable tasks to prevent others in their family, neighborhood, or community from experiencing distress are more likely to lead enduring and positive lives (Rak and Patterson, 1996). A characteristic that resilient children have is they accept their strengths and weaknesses and perceive themselves to have value to themselves and others (Rak and Patterson, 1996). Children with realistic self-concepts and higher levels of self-esteem engage in fewer negative health behaviors and express less intention to do so in the future. With regard to sexual behavior, youth with

low self-esteem are more likely to become involved in premarital sexual relationships and teen-age pregnancies (King, 1997). By making a fervent effort to enhance positive and realistic child self-concept/self-esteem in classrooms, health educators may increase the likelihood that healthy behavior will be adopted by these children (King, 1997). For instance, King (1997) has found that personal attributes such as self-esteem is relevant to health behavior. He discovered that significant positive correlations were found between general health behavior and both self-esteem and value of health. Specifically, in young adolescents, self-esteem was significantly and positively correlated with the personal health, mental health, and social aspects of health behavior.

Self- Efficacy. The concept of general self-efficacy (GSE) is based on Bandura's dimension of generality. This idea of self-efficacy, the belief that one can change risky behaviors by personal action, is also thought to play an important role in resiliency. Conner and Norman (1995) contend that actions are pre-shaped in thought in that people anticipate either optimistic or pessimistic scenarios in line with their level of self-efficacy. Once an action has been taken, high self-efficacious individuals invest

more effort and persist longer than those with low self-efficacy (Conner and Norman, 1995).

Sherer et al. (1982) defined general self-efficacy as "a general set of expectations that a person possesses, based on past experience, that affect his or her expectations of success in new situations." (Sherer et. al., 1982). The processes through which self-efficacy develops is complex. In evaluating competence, one may take into account two sets of variables: (1) one's own skills and ability, and (2) the circumstances of each situation (Sherer et al., 1982). For each situation there may be personal or situational factors which render it more or less difficult or demanding. For example, Ellickson and Hays (1991) studied the determinants of future substance use in 1,138 eight and ninth graders in ten junior high schools. As potential predictors of onset, they analyzed pro-drug social influences, resistance self-efficacy, and perception of drug use prevalence. Social influence or exposure to drug users combined with low self-efficacy for drug resistance turned out to predict experimentation with drugs nine months later (Ellickson and Hays, 1991).

According to Bandura, perceived self-efficacy should always be as situation-specific as possible. One has to tailor the questions to the situation, for example smoking

cessation or condom use. However, there still exist generalized measures that have considerable predictive value (Mittag & Schwarzer, 1993; Snyder et al., 1991; Wallston, 1992).

Self-efficacy can be a generalized trait reflecting a personal resource factor to cope with stress in various life domains. In this sense, it mirrors optimistic self-beliefs that relate to confidence in one's overall coping resources. There are a few theoretical differences between dispositional optimism and generalized self-efficacy, but the empirical association is above .60 (Schwarzer, 1994). Optimism is a broader construct that can be further subdivided into defensive and functional optimism (S. E. Taylor, 1989). Most people are unrealistically optimistic when they assess situation-outcome relationships. Also, most resilient adults believe that their actions will produce positive outcomes and that they are personally able to cope with life demands (Conner, M., & Norman, P. 1995).

Pro-Social Behaviors. The exhibition of pro-social behaviors is also thought to serve as a mediating factor in resiliency. Rutter (1985) found that adolescents who exhibit caring and helpfulness are more likely to persevere in the face of family discourse. Supporting her findings, Werner (1992) found that resilient children in her Kauai

study were characterized as being "helpful" and "participate in group activities." It is also thought that the exhibition of pro-social behaviors often mediates the fact that at-risk children often get labeled as at-risk, and therefore, are less likely to be solicited for questions in class or asked to participate in classroom activities (Rutter, 1985).

Future Plans and Goals. It has been found that adolescents who have future goals and plans for those goals tend to be more resilient. For example, Lohrman et. al. (1997) evaluated the efficacy of a 17 lesson HIV/AIDS unit to determine if having life goals is a factor essential to pregnancy prevention, as well as, HIV prevention. Results indicated that students with goals, with or without specific plans, were 1.24 times more likely to not be sexually active than students with no goals or plans (Lohrman, 1997). Similarly, Jenkins and Smith (1990) found that adolescents from high risk backgrounds who develop strong interests in vocational or academic endeavors may be more resilient to the effects of family adversity. It has also been demonstrated that those students who perceive themselves as being on the "college track" are often better able to persevere despite environmental risk (Jenkins and Smith, 1990).

Summary

The purpose of this study is to provide evidence for a more reliable, practical, and informed measure to determine changes in adolescent resiliency. Also, to provide evidence that protective factors in the environment are merely artifacts that affect an adolescent's ability to overcome adversity. Almost all the research related to resiliency points out that resiliency is dependent on the quality of relationships affecting one's development supported by protective factors in the environment. The manner in which these characteristics of resiliency affect the mediating variables related to resiliency (e.g., self-esteem, self-efficacy, perceived social support, future plans and goals, etc.) is more likely to influence an adolescent's ability to overcome risk in the environment. Therefore, the PRESS Scale of Resiliency was developed based on the current literature to provide a more reliable, practical, and meaningful tool to be used in the evaluation of health and human services to adolescents.

CHAPTER THREE

Research Method

A study of 216 male and female students was conducted using a developed instrument based on the relevant literature to demonstrate the characteristics of a more practical and reliable instrument to be used in the evaluation of health and human service programs.

Participants

Participants included 216 male and female students from two (2) Southern California suburban middle schools (grades 6-8). Students were participating in a comprehensive teen pregnancy prevention project funded by the State of California and coordinated by the local school district. Participants were briefed and debriefed as to the nature of study. Informed consent was obtained through a positive permission form sent to each students home via regular mail. There were no further restrictions on who may participate in the study.

Procedure

The PRESS Scale of Resiliency (See Appendix A.) was distributed during the home room class session with the instructor's and parent's prior knowledge and permission. The students were briefed as to the nature and purpose of

the study and were informed that the questionnaire would take 15-20 minutes to complete. Confidentiality of the participants completing the questionnaire was ensured through the use of a numbering code (birthdate plus ethnicity code). A brief section on demographics preceded the other measures. Participants were presented all the measures in a single packet and completed the entire questionnaire at the school. The PRESS Scale of resiliency was developed using the 5 main sub-scales including social support, self- esteem, self- efficacy, pro- social behaviors, and future plans and goals.

Measuring Social Support

The Social Support subscale is based on Susan Harter's (1985) *Social Support Scale for Children*. This sub-scale contains four (4) individual sub-scales including parents, teachers, close friends, and classmates. Initially, Harter (1985) employed a response format in which each item was structured in order to overcome the tendency for existing two-choice questionnaire formats to "pull" for socially desirable responses. The format of each item was as follows: The subject is first asked to decide which kind of kid is most like him or her, the one described in the first part of the statement or the one described in the second part of the statement. He or she is then asked to go to the

side of the statement which is most true for them and then decide whether this statement is only sort of true for them or really true. The social support subscale contains 25 items and employs a Likert scale response format ranging from 1(Not True of Me) to 4 (Really True of Me). Some items are reversed scored.

Self-Esteem

Much of the current literature regarding resiliency and teen pregnancy prevention suggests that one needs to have a sense of *competence* and *self-worth*. This forms the foundation in which life goals and plans are made and carried out.

This sub-scale was based on *Rosenburg's Measure of Self- Esteem* (1979). The sub-scale contains 10 items which assess the various domains of self-esteem. It correlates with the *Coopersmith Self-Esteem Inventory* (.79) and the *Tennessee Self-Concept Scale* (.81). The response format employs a 4 point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Item number 3 ("All in all, sometimes I feel like a failure."), item 5 ("I feel that I do not have much to be proud of."), item 8 ("I wish I could have more respect for myself."), item 9, ("I feel useless at times."), and item 10 ("At times I think I'm no good at all.") are reversed scored and recoded in analysis.

The sub scale score is calculated by computing the mean score for each of the ten (10) items for each respondent and calculating the overall group sub scale mean.

Pro-Social Behavior

The exhibition of pro-social behaviors increases a child's ability to find and keep healthy relationships with others. The current literature suggests that there may be a correlation between an individual's ability to interact with a group (group identification and support) and the individual's ability to overcome obstacles and problems in life (Hawkins, 1992). Moreover, self reports of having a sense of humor and perseverance are also pro-social behaviors related to resiliency (Werner, 1994).

A sub-scale was developed using 8 items relating to personal responsiveness, flexibility, empathy and caring, levels of violence, participation in group discussions, the presence of communication skills. Item 21 ("When I get mad at someone, I raise my voice."), item 23 ("I do things that are against the law."), item 24 ("I get into arguments with others.") and item 26 (There are times when I get so mad at a person I want to hurt them.") are reversed scored and recoded during analysis. The sub scale score was calculated by computing the mean score for each of the eight (8) items

for each respondent and then calculating the overall group sub scale mean.

Self-Efficacy

Bandura (1989) proposed that a person's behavior is a result of expectancies and incentives. Resilient adolescents tend to have a higher sense of situational self-efficacy related to behaviors that could place them at risk (Werner, 1994). Situational aspects such as decision making, refusal skills, and situational management are all vital in the presence of risk reduction and resiliency.

Items in this subscale are based on "if-then" statements. The semantic structure of outcome expectancies are: "If (behavior), then (consequences/outcome)". Therefore, they can be tailored to the individual program components depending on the type of program. However, since there is no way to determine the reliability of single items, the scale consists of 5 items employing a 4 point Likert scale ranging from 1 (Not True at All) to 4 (Very True). This helps to assure that the theoretical constructs are tapped reliably by the sum score. The sub scale score was calculated by computing the mean score for each of the five (5) items for each respondent and then calculating the overall group sub scale mean.

Future Plans and Goals

Future plans and life goals was assessed using four (4) items to determine the extent to which respondents believed that they would reach their life goals, had life plans to reach their goals and could perceive to reach their life goals. The sub scale score was calculated by computing the mean score for each of the four (4) items for each respondents and then calculating the overall group sub scale mean.

CHAPTER FOUR

Results

Reliability

Reliability coefficients for each of the 5 sub- scales were calculated to determine the extent to which Reliability analyses were derived from samples of boys and girls from two junior high schools (grades 6-9) (n=168). All samples were from suburban Southern California schools ranging from lower to middle class SES's. 67% were Caucasian (Anglo), 18% were Hispanic, 9% African American and 6% were "Other". Internal consistency reliabilities for each subscale were calculated using Chronbach's Alpha coefficient and are reported in Figures 1- 5.

Content and Face Validity

Content and face validity was assessed by a panel of 5 "experts" (program staff, researchers, and academics). Each panel member was given the operational definitions and were instructed to match each definition to the appropriate items in each subscale. Feedback the raters indicated that the response format for the social support sub- scale was too timely and very confusing. Therefore, response categories were changed to be more consistent with the other sub-scales as well as shorten testing time and reduce respondent burden.

Readability

Readability of instrumentation used in the evaluation of adolescent health interventions is of great concern. For an instrument to be practical, it must be legible and comprehensible to varying reading levels. The readability of the PRESS Scale of Resiliency was assessed using the SMOG readability formula (McLaughlin, 1969.) The SMOG formula ensures 90 percent comprehension (i.e., a person with a 5th grade reading level will comprehend 90 percent of the material rated at this level.) To calculate the SMOG score of a survey, the first 10 consecutive items, the median 10 items and last 10 items were chosen for analysis. From this sample of 30 items, all polysyllabic words (words containing three or more syllables), including repetitions of the same word were calculated and totaled. Then, an estimate of the square root of the total number of polysyllabic words was calculated. This was done by finding the nearest perfect square to the 100th decimal place. A constant of three (3) was added to the square root thus giving a SMOG grade (a reading grade level that a person must have completed if he or she is to fully understand the text being evaluated) (McLaughlin, 1969.)

CHAPTER FIVE

Discussion

Current findings regarding the reliability and appropriateness of the PRESS Scale of Resiliency are promising. Reliability analyses conducted on each of the five (5) sub- scales indicate moderate reliability of the items in the current sample. The *social support* sub-scale produced reliability coefficients consistent with those found by Harter (1985) and others. The *pro- social behaviors* sub- scale produced a coefficient of .69 which is consistent with other measures of situational self- efficacy including Schwarzer (1994). The *self- esteem* sub-scale produced a reliability coefficient of .82. The *future plans and goals* sub- scale produced reliability coefficient of .70. The reliability analysis of the *self- efficacy* sub-scale ($r=.62$) indicated that the deletion or re- wording of the item "*I am sure that I can talk to my parents about sex*" would increase sub- scale reliability ($r= .72$). It is important to note that this item was rated as having low content validity due to a format that was not consistent with the format of other self- efficacy items. (See Appendix A). As a result, the "If...Then" format will be used to adjust this item. The reliability of each of the five (5) sub- scales

could be increased by the inclusion of more items. However, this might increase testing time resulting in a highly reliable yet impractical instrument.

Data from the current sample indicated a SMOG score of 5.1. Therefore, it was assumed that any participants in the survey would need a reading level at least from the fifth grade on. Inherently, not all 5th or even 6th grade students will have demonstrated the ability to read at or beyond 5th grade. The readability of the PRESS Scale of Resiliency will be meaningful for use in the evaluation of adolescent health interventions in schools.

Content and face validity results indicated that almost all of the proposed items were included in the current instrumentation. These results will be used in the development of question formatting and sub-scale development in subsequent versions of the scale.

Implications for Health Promotion

Both practitioners and researchers are beginning to conceptualize primary prevention programs of relative risk to one of relative resilience (Simeonsson and Covington, 1994). However, this conceptualization needs to move past research and theory into a paradigm shift. This shift would include a greater emphasis on the development of the

adolescent rather than a narrow focus on those of risk factors related to disease and maladaptation. The promotion of health and well being is very complementary to the role of the prevention of illness, school failure, disorder and individual distress (Simeonsson, 1994). A resiliency approach to promoting the well-being of adolescents and, at the same time, preventing poor health behaviors and delinquency has ramifications at the primary, secondary and tertiary prevention levels. The aim of a resiliency model in primary prevention should be to build upon existing strengths of the adolescents thereby increasing new incidences of the exhibition and reflection of pro-social behaviors, personal self-efficacy, and social support. In secondary prevention, the aim might be to focus on increasing a child's sense of self and situational self-efficacy. Tertiary prevention resiliency models might focus on rebuilding the sense of self and the development of personal future plans and goals. Mangham et. al. (1995) provides examples of a secondary prevention approach that focus on resiliency. The Northern Fly-in-Camps project places youth in challenging situations requiring responsibility, teamwork, and skills underlying resiliency (Mangham, 1995).

However, community based programs should be implemented before there is a perceived need by the targeted group. A change to a resiliency paradigm can also lead to those same outcomes that are seen in community action programs (Mangham, 1995). Responding well to adversity would seem to strengthen the targeted community and increase its power to affect additional social change and obtain further support for its objectives and goals (Mangham, 1995). Resiliency also has a place in school health prevention programs. Marshall (1993) has identified elements of effective schools that have clear implications for defining guiding principles for primary prevention (Simmeonsson, 1994). Marshall (1993) points out the need for children to feel a sense of "pro-social curriculum" that assists the child in identifying connectedness with peers and staff as well as building a sense of personal self-efficacy. The role of the school in fostering the emotional well being of an adolescent is paramount to the mission of education. In fact, the promotion of a child's sense of personal worth and competence has been identified as one of the central responsibilities of the school (Marshall, 1993). Schools and school policies need to be directed towards creating high expectations including building mastery through challenging assignments and critical thinking as well as

fostering support from parents, administrators and teachers. Preventionists should recognize the value of the school as the central environment of children. To this end, a resiliency model would support the need for the integration of school- community linked services often found at the elementary level in "Healthy Start" type programs.

In community-based programs, personal attributes such as self-esteem, self- efficacy, and social support and value of health are relevant to health behavior. Efforts to modify young persons' behaviors are futile if there is not an understanding of the motives underlying adolescent health behavior fail to account for those factors relating to resiliency that may affect health behavior. The importance of culture and family dynamics is of central importance to a community resiliency approach. It has often been found that an adolescent's sense of cultural or ethnic identity is correlated with there sense of self and self efficacious behaviors (Phinney, 1989). Much work needs to be done in the area of building upon family resiliency. The ability of parents to model goal setting and attainment as well as perseverance is imperative for the development of the adolescent.

Implications for Research and Evaluation

Current research is proliferating varying definitions of adolescent resiliency. However, these definitions do not include the process in which resiliency occurs. A standardized definition will serve the field best and allow for a heightened comparability of findings and implications. More important, little is known on how developmental factors related to resiliency and protective factors in the environment interact.

Longitudinal research is specifically valuable in that it can focus more closely on how the effects of individual developmental factors vary depending on the age and systems level characteristics of the family and community. For example, Mangham et. al. (1995) points out that factors related to the protection of a young child in the inner city may not be protective factors of a young person living on a rural farm (Mangham, 1995). It is hypothesized that those participants who participate in focused activities related to increasing personality and developmental factors related to resiliency will be more likely to overcome environmental adversity than do those participants who do not. Research is needed on factors related to resiliency in families and communities and on resiliency in particular ethnic and social groups. These findings are of critical importance

for three main reasons. First, it is important to note that interventions that aim to increase resiliency in at risk youth should focus more on personality and developmental factors (e.g., self-esteem, perceived social support, self-efficacy, etc.) than in building protective factors in the environment. Second, studies of investigating resiliency in adolescents should move away from focusing on single protective factors and begin focusing more attention on the ways in which multiple mediating variables related to resiliency work to increase resiliency in adolescents. Lastly, if the objective of a program is to build resiliency for students as an intermediate step in increasing healthy behaviors or decreasing unhealthy behaviors, then a conscious and rigorous evaluation effort is necessary. This is important to determine whether the desired outcomes are being achieved. Evaluation is critical; knowing that even the most well intentioned programs may miss many of the students who need them the most.

Recommendations for Future Research and Practice

There are significant methodological challenges to this proposed study. First, when high risk is defined by a certain point on a continuous scale measure, there will inherently be heterogeneity in those that score "high risk". This heterogeneity will reflect the fact that not all

children within each risk group will have been exposed to exactly the same types of adversity or to the same extent of adversity. Interventions that target entire school populations assume that all students are under stress and adversity. This may hamper the ability to reach those students facing unusual risk (Mangham, 1995). Second, because there could be other contributory factors influencing factors related to resiliency, future studies should focus on increasing control among participants in both the intervention and comparison groups. At the same time, subsequent investigations into resiliency should include long term longitudinal assessments of participants to determine if these personality and developmental factors continue to help adolescents persevere throughout their lifespan.

Issues related to measurement of resiliency also include issues related to validity. Construct validity is concerned with the relationship of the measure to the underlying attributes it is attempting to assess. In other words, "Does the PRESS Scale of Resiliency in fact measure resiliency and nothing but resiliency?". Answering this question will demonstrate the construct validity of your instrument.

Construct validity can be best assessed by examining issues relating to convergent and discriminate validity. Convergent validity is demonstrated by the extent to which the measure correlates with other measures designed to assess similar constructs. Discriminate validity refers to the degree to which the scale does not correlate with other measures designed to assess dissimilar constructs.

Construct validity is often examined using the multitrait-multimethod matrix developed by Cambell and Fisk (1959) and/or Trochmin (1995).

Future investigation into the nature of resiliency and protective factors may want to focus more complex interventions that aim at increasing a number of factors related to resiliency. Such research may want to include other factors such as focused case management systems, family support teams, and peer assistance programs at local schools. As a result, the difference between protective factors and resiliency can come into sharper focus.

APPENDIX A: The PRESS Scale of Resiliency

PRESS Scale "In My Life"

Part I. Please circle or check the response that best fits your answer.

1. What school do you go to? : _____ (fill in)

2. What grade level are you in?:

☐ 6th ☐ 7th ☐ 8th ☐ 9th
☐ 10th ☐ 11th ☐ 12th

3. What is your ethnicity?:

☐ Anglo ☐ African American ☐ Hispanic ☐ Philipino
☐ Asian ☐ Other

4. What is your sex?: ☐ Male ☐ Female

5. How active are you in after school activities (sports, crafts, dancing, hobbies, clubs, etc.)?:

☐ Very active ☐ Somewhat active ☐ Not very active ☐ I'm not active

Part II. The following sentences are about people in your life. There are no right or wrong answers since kids are very different from one another. These questions talk about two kinds of kids, and we want to know which kids are most like you. To answer each question, decide first whether you are more like the kids on the left side or if you are more like the kids on the right side. Once you have found which kind of kid you are most like, please decide whether that is either sort of true for you or really true for you and then mark that box. Please only choose one box. If you do not understand how to answer these questions, please raise your hand and your instructor will help you. The instructor will now go over the sample question with you.

**Really
True
for Me** **Sort of
True
for Me**

**Sort of
True
for Me** **Really
True
for Me**

Sample

Some kids like
peanut butter and
jelly sandwiches

BUT

Other kids do not like
peanut butter and
jelly sandwiches

	Really True for Me	Sort of True for Me		Sort of True for Me	Really True for Me
1		Some kids have parents who don't really understand them	BUT	Other kids have parents who really do understand them	
2		Some kids have classmates who like them the way they are	BUT	Other kids have classmates who wish they were different	
3		Some kids have a teacher who helps them if they are upset and have a problem	BUT	Other kids don't have a teacher who helps them if they are upset and have a problem	
4		Some kids have a close friend who they can tell their problems to	BUT	Other kids don't have a close friend who they can tell problems to	
5		Some kids have parents who don't seem to want to hear about their children's problems	BUT	Other kids have parents who do want to hear about their children's problems	
6		Some kids have classmates that they can become friends with	BUT	Other kids don't have classmates that they can become friends with	
7		Some kids don't have a teacher who helps them do their very best	BUT	Other kids do have a teacher who helps them to do their very best	

	Really True for Me	Sort of True for Me		Sort of True for Me	Really True for Me
8		Some kids have a close friend who really understands them	BUT	Other kids don't have a close friend that really understands them	
9		Some kids have parents who care about their feelings	BUT	Other kids have parents who don't seem to care very much about their children's feelings	
10		Some kids have classmates who sometimes make fun of them	BUT	Other kids don't have classmates who make fun of them	
11		Some kids do have a teacher who really cares about them	BUT	Other kids don't have a teacher who cares about them	
12		Some kids have a close friend who they can talk to about things that bother them	BUT	Other kids don't have a close friend who they can talk to about things that bother them	
13		Some kids have parents who treat their children like a person who really matters	BUT	Other kids have parents who don't usually treat their children like a person who really matters	
14		Some kids have classmates who pay attention to what they say	BUT	Other kids have classmates who don't usually pay attention to what they say	

	Really True for Me	Sort of True for Me		Sort of True for Me	Really True for Me
15		Some kids don't have teacher who is fair to them	BUT	Other kids do have a teacher who is fair to them	
16		Some kids don't have a close friend who they like to spend time with	BUT	Other kids do have a close friend who they like to spend time with	
17		Some kids have parents who like them the way they are	BUT	Other kids have parents who wish their children were different	
18		Some kids don't get asked to play in games with classmates very often	BUT	Other kids often get asked to play in games by their classmates	
19		Some kids don't have a teacher who cares if they feel bad	BUT	Other kids do have a teacher who cares if they feel bad	
20		Some kids don't have a friend who really listens to what they say	BUT	Other kids do have a close friend who really listens to what they say	
21		Some kids have parents who don't act like what their children do is important	BUT	Other kids have parents who do act like what their children does is important	

	Really True for Me	Sort of True for Me		Sort of True for Me	Really True for Me
22		Some kids often spend their free time alone	BUT	Other kids often spend their free time with friends	
23		Some kids have a teacher who treats them like a person	BUT	Other kids don't have a teacher who treats them like a person	
24		Some kids don't have a close friend who cares about their feelings	BUT	Other kids do have a close friend who cares about their feelings	
25		Some kids have a special grown up who they can turn to for help (other than their parents)	BUT	Other kids <u>do not</u> have a special grown up who they can turn to for help	

Part III.

The following ten sentences describe feelings and attitudes a person might have about themselves. Please circle the number that corresponds with the extent to which each statement is true of you. Be as honest as you can.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I feel that I'm a person of worth.	1	2	3	4
2. I feel that I have a number of good qualities.	1	2	3	4
3. All in all, Some times I feel like a failure.	1	2	3	4
4. I am able to do things as well as other kids.	1	2	3	4
5. I feel that I do not have much to be proud of.	1	2	3	4
6. I have a positive attitude toward myself.	1	2	3	4
7. On the whole, I am satisfied with myself.	1	2	3	4
8. I wish I could have more respect for myself.	1	2	3	4
9. I feel useless at times.	1	2	3	4
10. At times I think I'm no good at all.	1	2	3	4

Part IV. The following sentences are about how you might act or feel during different situations. Remember, there are no "right" answers. Please circle the answer that best applies to you.

1. I am sure that I can abstain from not have sex, even if my boyfriend/girl friend pressures me to.

Not true at all Hardly true Somewhat true Very true

2. I am sure that I can tell my boyfriend/girlfriend that I don't have sex even if telling him or her might be embarrassing.

Not true at all Hardly true Somewhat true Very true

3. I am sure that I can talk to my parents about sex.

Not true at all Hardly true Somewhat true Very true

4. I am sure that I can avoid situations that may put my future goals at risk.

Not true at all Hardly true Somewhat true Very true

5. I am confident that my parents will love me no matter what I do.

Not true at all Hardly true Somewhat true Very true

6. I believe that I can reach my goals for the future.

Not true at all Hardly true Somewhat true Very true

7. I have a plan in my life to reach my goals.

Not true at all Hardly true Somewhat true Very true

8. When I have something unpleasant to do, I stick to it until I finish it.

Not true at all Hardly true Somewhat true Very true

Part V. Please read the following sentences and circle how often each sentences applies to you. Circle only one answer.

1. I talk to my teachers about things going on in my life.

Never Hardly ever Sometimes Usually

2. I ask questions in class.

Never Hardly ever Sometimes Usually

3. When I get mad at someone, I raise my voice.

Never Hardly ever Sometimes Usually

4. When I have a problem with one of my friends, I go to an adult for advice.

Never Hardly ever Sometimes Usually

5. I do things that are against the law.

Never Hardly ever Sometimes Usually

6. I get into arguments with others.

Never Hardly ever Sometimes Usually

7. When I have a problem with someone, I talk about it with them.

Never Hardly ever Sometimes Usually

8. There are times when I get so mad at a person I want to hurt them.

Never Hardly ever Sometimes Usually

9. I think about how I will reach goals in my life.

Never

Hardly ever

Sometimes

Usually

10. I have a good sense of humor.

Never

Hardly ever

Sometimes

Usually

Please return to your teacher.

APPENDIX B: Reliability Analyses

Figure 1.: Inter-item Correlations of the Self-Esteem Subscale

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics					
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
N1	27.8095	27.4147	.4860	.6025	.8169
N2	27.7460	28.3216	.4620	.3314	.8203
N3	28.6984	26.6334	.3856	.3907	.8329
N4	27.9683	28.5796	.3220	.3918	.8297
N5	28.0317	25.2893	.5344	.4942	.8116
N6	27.8730	25.8868	.6644	.7694	.8013
N7	28.0794	24.4936	.6646	.6775	.7973
N8	28.7778	24.5305	.5744	.4006	.8073
N9	28.4603	25.6395	.5196	.5008	.8131
N10	28.2698	23.7808	.6081	.5849	.8036

Reliability Coefficients 10 items

Alpha = .8289 Standardized item alpha = .8325

Figure 2.: Inter-item Correlations of the Self-Efficacy Subscale

RELIABILITY ANALYSIS - SCALE (ALPHA)

Subscale= Self-Efficacy
Item-total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
N11	9.0794	3.8807	.5495	.4245	.3802
N12	9.0635	4.1572	.4551	.3474	.4580
N13	9.8889	4.5520	.1689	.0326	.7295
N14	8.8254	4.9206	.4250	.2247	.5054

Reliability Coefficients 4 items

Alpha = .6929 Standardized item alpha = .6298

Figure 3.: Inter-item Correlations of the Future Plans and Goals Subscale

RELIABILITY ANALYSIS - SCALE (ALPHA)

Subscale = Future Plans and Goals

Item-total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
N16	9.7460	3.5151	.5262	.2865	.6462
N17	9.9048	2.9585	.5890	.3610	.4800
N18	10.3333	3.8065	.2615	.1127	.7054
N27	9.9683	3.1280	.4239	.2723	.6153

Reliability Coefficients 4 items

Alpha = .6998 Standardized item alpha = .6948

Figure 4.: Inter-item Correlations of the Pro- Social Behaviors Subscale

RELIABILITY ANALYSIS - SCALE (ALPHA)

Subscale= Pro-Social Behavior

Item-total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
N19	16.1000	11.7525	.4773	.2576	.6363
N20	14.8833	13.6641	.1283	.1414	.7192
N21	16.1333	14.2870	.1251	.1299	.7065
N22	16.0500	11.9127	.4149	.3579	.6512
N23	14.8667	10.9989	.5294	.4282	.6200
N24	15.7167	12.8506	.4467	.2691	.6508
N25	15.0333	11.6599	.4934	.2521	.6323
N26	15.8167	11.7116	.4519	.2665	.6419

Reliability Coefficients 8 items

Alpha = .6893 Standardized item alpha = .6874

**Figure 5.: Inter-item Correlations of the Social Support
Subscale**

RELIABILITY ANALYSIS SCALE (ALPHA)

Subscale= Social Support

Parent subscale	.85
Classmate subscale.	.72
Teacher subscale	.81
Friend subscale	.70

Reliability Coefficients 24 items

Alpha = .7712 Standardized item alpha = .7710

APPENDIX C.: Distribution of Responses

Figure 6.: Histogram of Social Support Responses

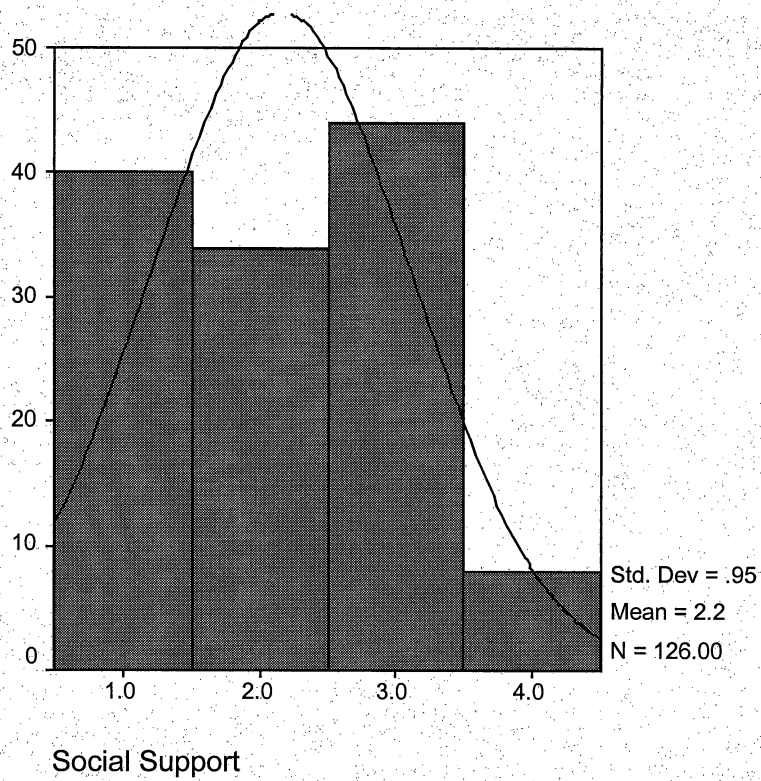


Figure 7.: Histogram of Self- Esteem Responses

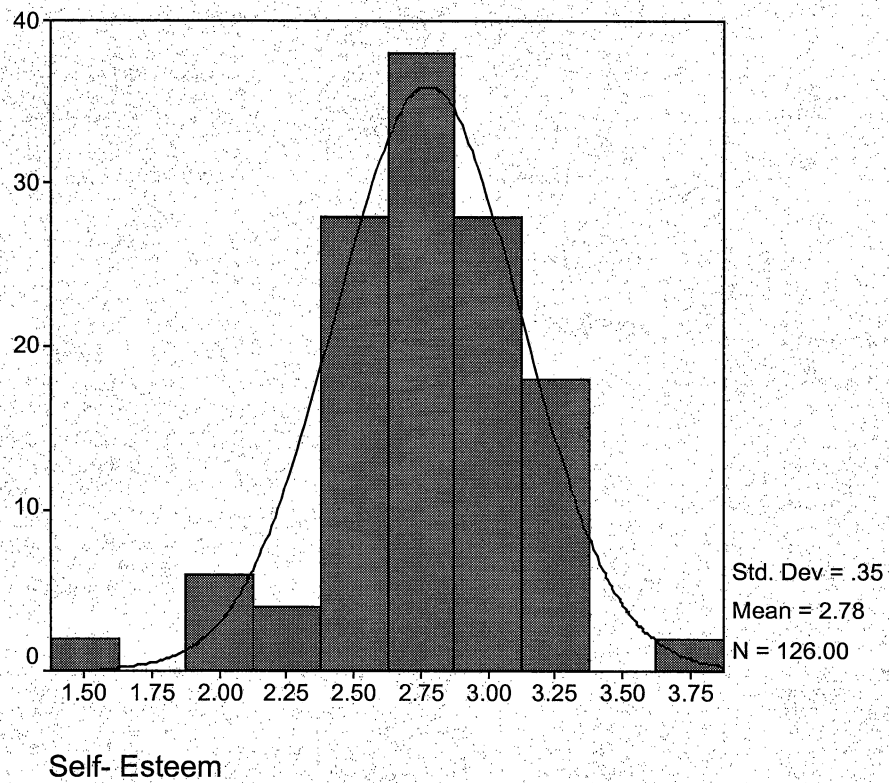


Figure 8.: Histogram of Situational Self- Efficacy Responses

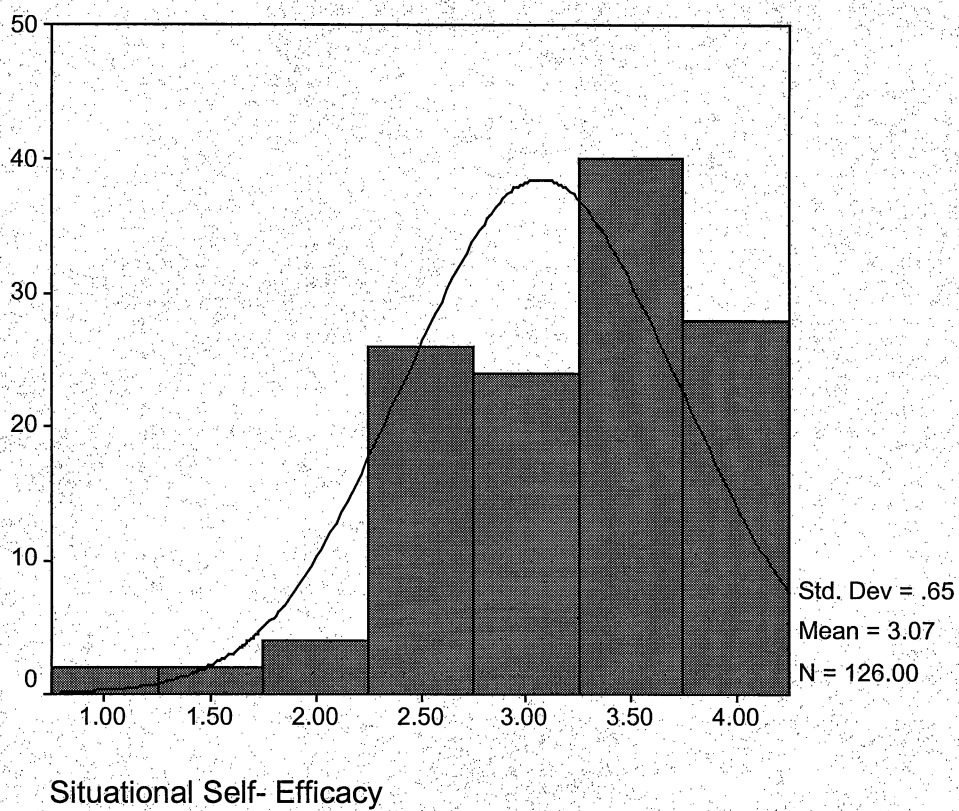


Figure 9.: Histogram of Future Plans and Goals Responses

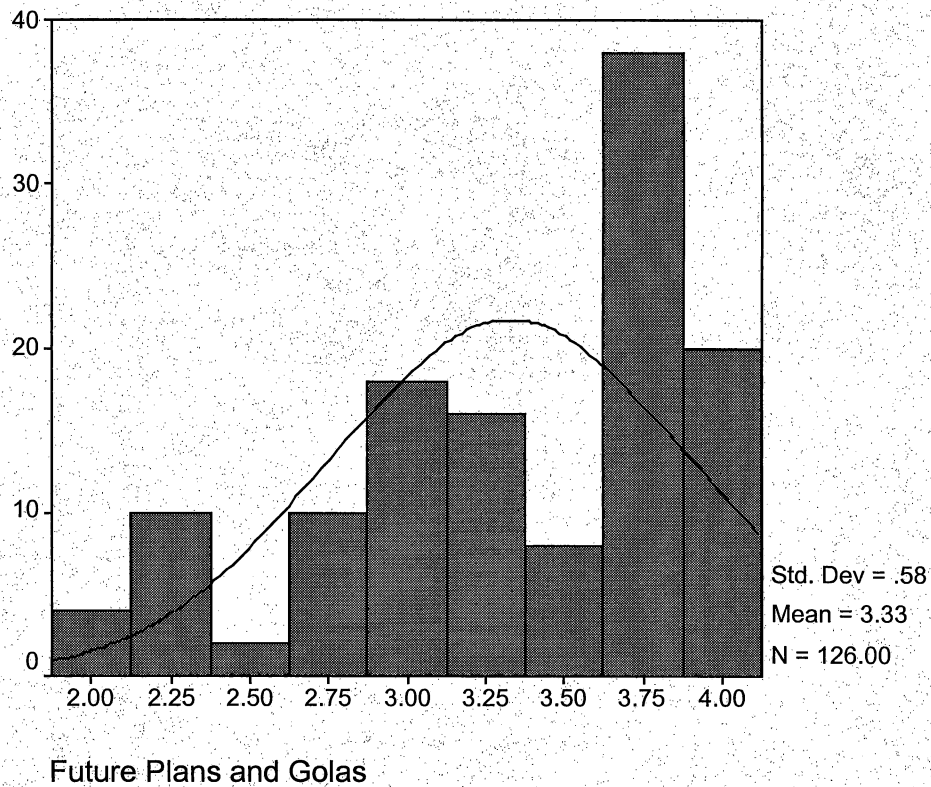
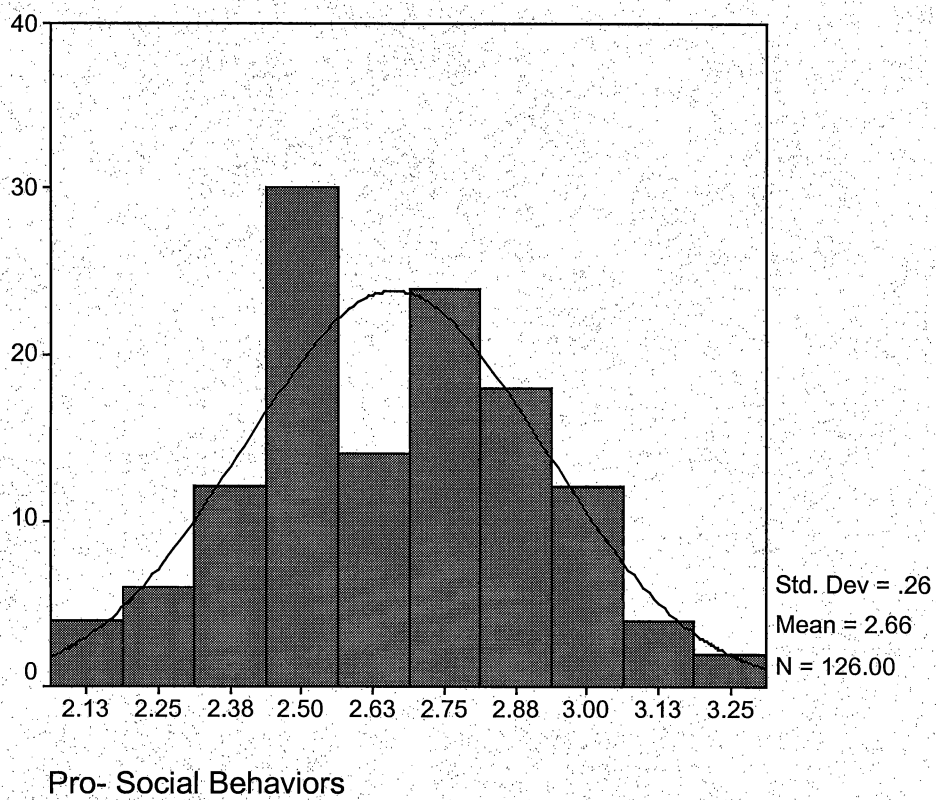


Figure 10.: Histogram of Pro- Social Behaviors Responses



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